



Phase Matrix, Inc.[®]
A National Instruments Company

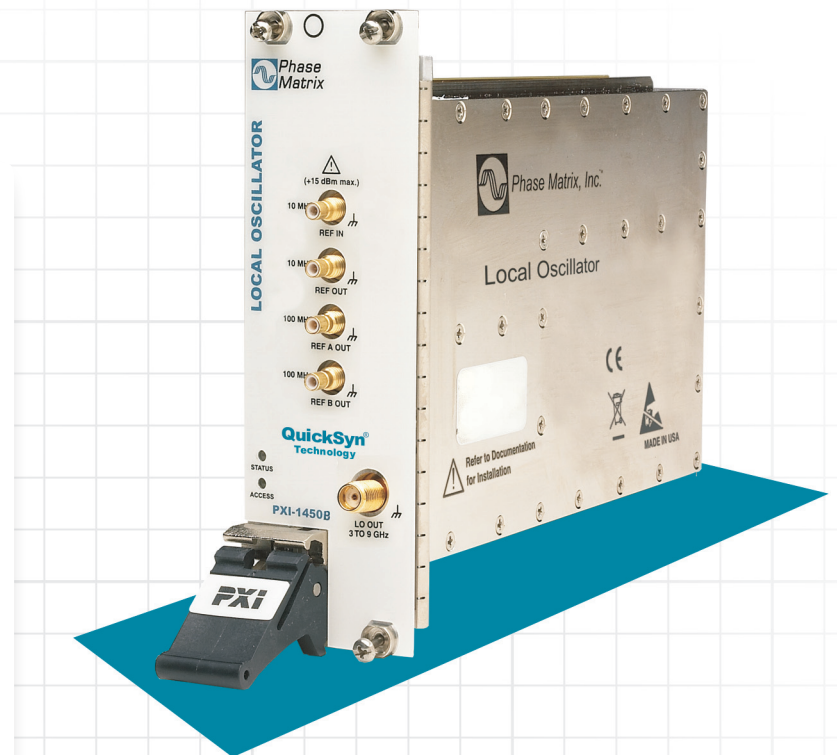
PXI MICROWAVE LOCAL OSCILLATOR MODULE

Model PXI-1450B

The PXI-1450B Local Oscillator Module is a PXI 3U, 2-slot synthesizer module intended for frequency down conversion applications. The PXI-1450B is a VCO-based, 3 to 9 GHz synthesizer that uses QuickSyn[®] technology, enabling a tuning resolution of less than 1 Hz and optimization for speedy (300 μ s typ.) settling time to allow for fast frequency down conversion applications that employ Phase Matrix models PXI-1420 MW Down-converter Module (2.7 to 26.5 GHz) and PXI-1430B RF Downconverter Module (100 kHz to 2.9 GHz).

The PXI-1450B contains all the circuitry necessary to lock the synthesizer and a 100 MHz ovenized crystal oscillator to an externally provided 10 MHz master reference oscillator. This capability enables the module to distribute its internal high-stability reference or the customer-provided external reference to other PXI modules within a PXI mainframe chassis.

The PXI-1450B is intended for use in applications such as synthetic instrumentation, microwave receivers, signal intelligence, or anywhere a microwave signal needs to be down converted to a baseband frequency for data capture, analysis, and measurement.



PXI
Systems Alliance

PXI MICROWAVE LOCAL OSCILLATOR MODULE

Model PXI-1450B

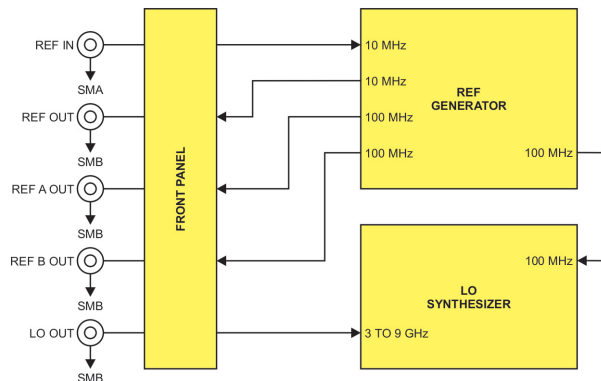
Front Panel



Software-User Interface



Simplified Block Diagram



PXI MICROWAVE

LOCAL OSCILLATOR MODULE

Model PXI-1450B

Specifications and ordering information subject to change without notice.

Specifications

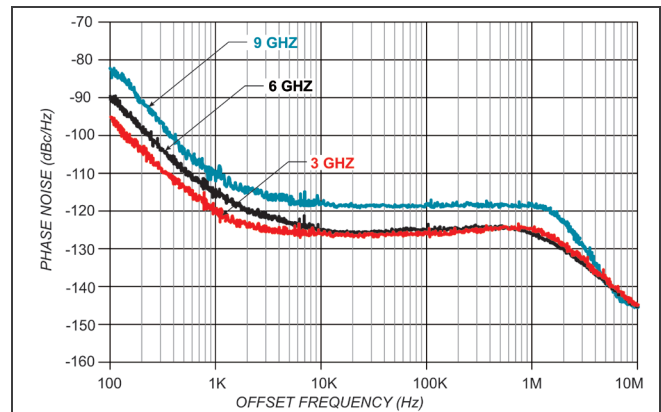
OUTPUT SPECIFICATIONS

DESCRIPTION	SPECIFICATION
Number of LO Outputs	1
Frequency Output Range	3 – 9 GHz (2.75 to 10 GHz typ.)
Frequency Output Step Size	0.1 Hz
Frequency Switching Speed	500 μ s (300 μ s typ.)
Output Power Accuracy	+16 dBm \pm 2 dB
Output Impedance	50 Ω nom.

SPECTRAL PURITY

DESCRIPTION

Harmonics	-12 dBc
Non-Harmonic Spurious	-60 dBc max. / -70 dBc nom.
Power Line Related Spurious	-40 dBc typ.
Phase Noise—measured at: <u>OFFSET</u>	9 GHz
100 Hz	-75 dBc/Hz
1 kHz	-103 dBc/Hz
10 kHz	-115 dBc/Hz
100 kHz	-115 dBc/Hz
1 MHz	-120 dBc/Hz
Floor	-145 dBc/Hz



Phase Noise (typ.)

PXI MICROWAVE

LOCAL OSCILLATOR MODULE

Model PXI-1450B

Specifications and ordering information subject to change without notice.

Specifications (continued)

REFERENCE FREQUENCY

DESCRIPTION	SPECIFICATION
Frequency Output	
REF OUT	10 MHz nom.
REF A OUT	100 MHz nom.
REF B OUT	100 MHz nom.
REF OUT Amplitude	0 dBm \pm 3 dB
Aging (<i>after 30 days of operation</i>)	\pm 1.0 ppm/year
Frequency Temp. Stability	\pm 0.5 ppm (<i>over 0° to 50° C</i>)
REF OUT Impedance	50 Ω nom.
REF IN Frequency ①	10 MHz
REF IN Lock Frequency Range	10 MHz \pm 2 ppm
REF IN Level Range	0 \pm 4 dBm
REF IN Impedance	50 Ω nom

PXIbus SPECIFICATIONS

DESCRIPTION	SPECIFICATION				
Module Type	3U/2-Slot				
Warm-up Time	15 minutes max.				
DC Power Dissipation	+3.3 V	+5 V	+12 V	-12 V	Total Power
	0.5A	0.5 A	0.75 A	0.1 A	16 W max.

PXI MICROWAVE

LOCAL OSCILLATOR MODULE

Model PXI-1450B

Specifications and ordering information subject to change without notice.

Specifications (continued)

GENERAL SPECIFICATIONS

DESCRIPTION	SPECIFICATION
Temperature Range	
Operating	0° to +55° C
Non-Operating	-40° to +70° C
Certifications	
CE Compliance	Low Voltage Directive 2006/95/EC
Safety	EN/IEC 61010-1:2001
EMC	EN 55011:2007, IEC 61326-1:2006
Weight	2 lb. / 0.91 kg
Connectors	
RF OUT	SMA (f)
REF IN	SMB (f)
REF OUT	SMB (f)
REF A OUT	SMB (f)
REF B OUT	SMB (f)
Warranty	1 Year

ORDERING INFORMATION

Model	PXI-1450B
Options	None
Accessories ²	
MPXI-14XX-ACC01	Cable set
Related Products	PXI Modules PXI-1410, PXI-1420, PXI-1430B, PXI-1440

Notes:

- 1 External reference frequency input to be within ± 2 ppm max. of actual internal reference frequency.
- 2 Software, manuals, and quick-start guides are available online www.phasematrix.com
- 3 "Typ." means approximately 2/3 of all units meet these characteristics at room temperature. Characteristics identified by typ. and nom. are by design and are not normally verified on every unit during production.

PXI MICROWAVE

LOCAL OSCILLATOR MODULE

Model PXI-1450B

Phase Matrix, Inc. designs and manufactures RF and microwave test-and-measurement (T&M) instruments, subsystems, and components and is a wholly owned subsidiary of National Instruments. Our array of instruments includes traditional benchtop frequency counters, modular (VXI) pulsed-frequency counters, modular (VXI and PXI) synthetic instruments, including downconverters, upconverters/synthesizers and local oscillators that are designed for both commercial and military applications. In addition, we produce instrument-grade, fast-switching synthesizer modules that can be used in various instruments or subsystems. We also manufacture a line of narrowband and broadband microwave components, ranging from VCOs to complex custom-built assemblies for military instrumentation and telecommunications applications.

Data sheet PN: DS_1450B Rev. C, Sept. 2013

Copyright © 2013 Phase Matrix, Inc. All rights reserved.